

2003-2004 Snow Mold Control Evaluation

Giants Ridge Golf Resort (Creeping Bentgrass Fairway)

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Introduction

In the absence of a turfgrass pathologist at the University of Minnesota, plant pathologists at the University of Wisconsin have been evaluating fungicides for the control of *Typhula* blight (*Typhula ishikariensis*) or snow mold. In addition to their sites throughout Wisconsin, Dr. Jung evaluated 75 various products and combinations to determine their effectiveness in controlling snow mold at Giants Ridge Golf Resort in Biwabik, MN.

Experimental Methods

This evaluation was conducted on creeping bentgrass maintained under golf course fairway management conditions, at 0.5-inch cutting height. Individual plots, 3 ft x 10 ft, were arranged in a randomized complete block design with three replications. The experimental area was not inoculated; all disease development was of natural occurrence. Treatments were applied with a CO₂-powered boom sprayer, using XR TeeJet 8005 VS nozzles, at 30 psi, in water equivalent to 2 gal per 1000 sq ft. Granular applications were applied using a shaker jar. Early applications were made on October 23, 2003, mid-application on November 8, 2003, and late applications on November 16, 2002. Percent speckled snow mold and quality were rated on April 15, 2004. Data obtained were subjected to analysis of variance and LSD was used to determine significant differences between treatment means.

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Table 1. Percent snow mold ratings from plots in Biwabik, MN taken April 15, 2004

Trt No.	Treatment Name	Form	Rate	Appl. Timing	% Snow mold Apr-15-04	Quality**
1	Untreated Control				51.67 a	2.3 j
2	Chipco 26 GT	2 SC	4 FL OZ/1000 FT2	Late	0.33 n	7 A
	Daconil WeatherStik	6 F	5.5 FL OZ/1000 FT2	Late		
	Turficide 400	40 F	6 FL OZ/1000 FT2	Late		
3	Compass	50 WG	0.25 OZ/1000 FT2	Late	3.67 j-n	5.7 a-e
	Daconil WeatherStik	6 F	5.5 FL OZ/1000 FT2	Late		
	Turficide 400	40 F	6 FL OZ/1000 FT2	Late		
4	Compass	50 WG	0.25 OZ/1000 FT2	Late	5 i-n	5 c-g
	Turficide 400	40 F	6 FL OZ/1000 FT2	Late		
5	Compass	50 WG	0.25 OZ/1000 FT2	Late	7.5 i-n	5.3 b-f
	Daconil WeatherStik	6 F	5.5 FL OZ/1000 FT2	Late		
6	Chipco 26 GT	2 SC	4 FL OZ/1000 FT2	Late	0 n	6.3 abc
	Bayleton	50 WG	1 OZ/1000 FT2	Late		
	Turficide 400	40 F	6 FL OZ/1000 FT2	Late		
7	Bayleton	50 WG	1 OZ/1000 FT2	Late	0.33 n	6 a-d
	Turficide 400	40 F	6 FL OZ/1000 FT2	Late		
8	Bayleton	50 WG	1 OZ/1000 FT2	Late	4.5 i-n	5.3 b-f
	Daconil WeatherStik	6 F	5.5 FL OZ/1000 FT2	Late		
9	Signature	80 WG	4 OZ/1000 FT2	Late	0.83 n	6.7 ab
	Chipco 26 GT	2 SC	4 FL OZ/1000 FT2	Late		
	Daconil WeatherStik	6 F	5.5 FL OZ/1000 FT2	Late		
10	Insignia	20 WG	0.9 OZ/1000 FT2	Both	15.83 e-n	4.7 d-h
11	Insignia	20 WG	0.9 OZ/1000 FT2	Both	1.17 n	6 a-d
	Iprodione Pro	2 SE	4 FL OZ/1000 FT2	Both		
12	Banner MAXX	1.3 ME	2 OZ/1000 FT2	Late	10 g-n	4.7 d-h
13	Medallion	50 WP	0.33 OZ/1000 FT2	Late	11.67 f-n	4.3 e-i
14	Medallion	50 WP	0.5 OZ/1000 FT2	Late	7 i-n	5.3 b-f
15	Medallion	50 WP	0.5 OZ/1000 FT2	Late	11.17 g-n	4.7 d-h
	Turficide 400	40 F	6 FL OZ/1000 FT2	Late		
16	Daconil Ultrex	82.5 WG	3.2 OZ/1000 FT2	Late	31.67 b-e	3 ij
17	Heritage	50 WG	0.4 OZ/1000 FT2	Late	35 a-d	3.3 hij
18	A14036B	3.6 SE	9.3 OZ/1000 FT2	Late	0 n	6.3 abc
19	A14036B	3.6 SE	4.7 OZ/1000 FT2	Late	0.83 n	6.3 abc
20	A14036B	3.6 SE	14 OZ/1000 FT2	Late	0.33 n	5.7 a-e
21	Banner MAXX	1.3 ME	2 OZ/1000 FT2	Late	3.33 k-n	5.7 a-e
	Medallion	50 WP	0.5 OZ/1000 FT2	Late		
22	Banner MAXX	1.3 ME	3 OZ/1000 FT2	Both	0.33 n	6 a-d
	Medallion	50 WP	0.5 OZ/1000 FT2	Late		
23	Daconil WeatherStik	6 F	5.5 OZ/1000 FT2	Late	0 n	6.7 ab
	Medallion	50 WP	0.5 OZ/1000 FT2	Late		
24	A13972A	95 ME	2 OZ/1000 FT2	Late	18.33 d-m	3.7 g-j
25	AND3118 (chlorothalonil)	5 G	15.1 LB/1000 FT2	Early	7 i-n	5.3 b-f
	AND3224 (PCNB)	15.4 G	6.36 LB/1000 FT2	Late		
	AND3238 (iprodione)	1.3 G	7.21 LB/1000 FT2	Early		
26	AND3118 (chlorothalonil)	5 G	15.1 LB/1000 FT2	Three	0 n	6 a-d
	AND3237 (triadimefon)	1 G	12.5 LB/1000 FT2	Three		
	AND3238 (iprodione)	1.3 G	7.21 LB/1000 FT2	Three		
27	AND3131 (chloroneb)	6.26 G	5.95 LB/1000 FT2	Late	6.17 i-n	5 c-g
	AND3224 (PCNB)	15.4 G	6.36 LB/1000 FT2	Mid		
28	AND3131 (chloroneb)	6.26 G	5.95 LB/1000 FT2	Late	13.33 f-n	4.3 e-i
	AND3226 (PCNB)	15 G	6.36 LB/1000 FT2	Mid		
29	AND3099 topsin/chloroneb	4.9 G	5.76 LB/1000 FT2	Early	8.67 h-n	5.3 b-f
	AND3118 (chlorothalonil)	5 G	15.1 LB/1000 FT2	Early		
	AND3224 (PCNB)	15.4 G	6.36 LB/1000 FT2	Late		

Snow Mold Control—

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Discussion

Only *Typhula ishihariensis* was active at this site. Disease pressure was considerable compared to other sites, with the untreated control averaging 51.67%. Six treatments provide 100% control (Trt#s 6, 18, 23, 26, 46, and 50). Limited damage in the first replication was caused by *Sclerotinia borealis*, particularly that of treatment #49.

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Trt No.	Treatment Name	Form	Rate	Appl. Timing	% Snow mold Apr-15-04	Quality**
30	Chipco 26 GT	2 SC	4 FL OZ/1000 FT2	Late	20.33	c-j 4 f-i
31	Daconil WeatherStik	6 F	5.5 FL OZ/1000 FT2	Late	18.33	d-m 4 f-i
32	Turficide 400	40 F	6 FL OZ/1000 FT2	Late	8.67	h-n 5 c-g
33	Compass	50 WG	0.25 OZ/1000 FT2	Late	20.83	c-i 4.3 e-i
34	Bayleton	50 WG	1 OZ/1000 FT2	Late	18.33	d-m 4.7 d-h
35	Signature	80 WG	4 OZ/1000 FT2	Late	43.33	ab 3 ij
36	Iprodione Pro	2 SE	4 FL OZ/1000 FT2	Late	18.33	d-m 4.3 e-i
37	Banner MAXX	1.3 ME	2 OZ/1000 FT2	Late	13.33	f-n 4.7 d-h
38	Banner MAXX	1.3 ME	3 OZ/1000 FT2	Late	4.5	i-n 5.3 b-f
39	AND3118 (chlorothalonil)	5 G	15.1 LB/1000 FT2	Early	20	c-k 3.7 g-j
40	AND3219 (PCNB)	15.4 G	6.36 LB/1000 FT2	Late	14.17	f-n 4.7 d-h
41	AND3224 (PCNB)	15.4 G	6.36 LB/1000 FT2	Late	20	c-k 4 f-i
42	AND3226 (PCNB)	15 G	6.36 LB/1000 FT2	Mid	36.67	abc 3.7 g-j
43	AND3238 (iprodione)	1.3 G	7.21 LB/1000 FT2	Early	26.67	b-g 3.7 g-j
44	AND3131 (chloroneb)	6.26 G	5.95 LB/1000 FT2	Late	13.33	f-n 4.7 d-h
45	AND3099 topsin/chloroneb	4.9 G	5.76 LB/1000 FT2	Early	25	c-h 3.7 g-j
46	AND3237 (triadimefon)	1 G	12.5 LB/1000 FT2	Three	0	n 6 a-d
47	Fore	80 WP	8 OZ/1000 FT2	Late	12	f-n 5 c-g
48	Heritage	50 WG	0.7 OZ/1000 FT2	Late	12.5	f-n 4.7 d-h
49	Prostar	70 WP	4.5 OZ/1000 FT2	Late	3.33	k-n 5.7 a-e
50	Prostar	70 WP	4.5 OZ/1000 FT2	Late	0	n 6.3 abc
	Turficide 400	40 F	6 FL OZ/1000 FT2	Late		
51	Prostar	70 WP	4.5 OZ/1000 FT2	Late	1.5	mn 6.3 abc
	Banner MAXX	1.3 ME	2 OZ/1000 FT2	Late		
52	Fore	80 WP	8 OZ/1000 FT2	Late	8.33	h-n 5.3 b-f
	Turficide 400	40 F	6 FL OZ/1000 FT2	Late		
53	Heritage	50 WG	0.7 OZ/1000 FT2	Late	1	n 6.7 ab
	Turficide 400	40 F	6 FL OZ/1000 FT2	Late		
54	Banner MAXX	1.3 ME	2 OZ/1000 FT2	Late	7.5	i-n 4.7 d-h
	Chipco 26 GT	2 SC	4 FL OZ/1000 FT2	Late		
55	Banner MAXX	1.3 ME	2 OZ/1000 FT2	Late	7	i-n 5.3 b-f
	Daconil WeatherStik	6 F	5.5 OZ/1000 FT2	Late		
56	Banner MAXX	1.3 ME	2 OZ/1000 FT2	Late	8.67	h-n 4.3 e-i
	Bayleton	50 WG	1 OZ/1000 FT2	Late		
57	Banner MAXX	1.3 ME	2 OZ/1000 FT2	Late	6.67	i-n 5 c-g
	Curalan	50 EG	1 OZ/1000 FT2	Late		
58	Curalan	50 EG	1 OZ/1000 FT2	Late	36.67	abc 3.3 hij
59	Emerald	70 WG	0.18 OZ/1000 FT2	Late	31.67	b-e 3.3 hij
60	Emerald	70 WG	0.18 OZ/1000 FT2	Late	8.67	h-n 5.3 b-f
	Turficide 400	40 F	6 FL OZ/1000 FT2	Late		
61	Emerald	70 WG	0.18 OZ/1000 FT2	Late	14.17	f-n 4.3 e-i
	Iprodione Pro	2 SE	4 FL OZ/1000 FT2	Late		
	Daconil WeatherStik	6 F	5.5 FL OZ/1000 FT2	Late		
62	Emerald	70 WG	0.18 OZ/1000 FT2	Late	28.33	b-f 4 f-i
	Insignia	20 WG	0.9 OZ/1000 FT2	Late		
63	Spectro	90 WG	4 OZ/1000 FT2	Both	20	c-k 4.3 e-i
	Endorse	2.5 WP	4 OZ/1000 FT2	Late		
64	Spectro	90 WG	4 OZ/1000 FT2	Early	11.67	f-n 5 c-g
	Endorse	2.5 WP	4 OZ/1000 FT2	Late		
	Spectro	90 WG	5.75 OZ/1000 FT2	Late		
65	Spectro	90 WG	4 OZ/1000 FT2	Both	3.33	k-n 6.3 abc
	Endorse	2.5 WP	4 OZ/1000 FT2	Late		
	Alude	46 L	5.5 FL OZ/1000 FT2	Late		
66	Endorse	2.5 WP	4 OZ/1000 FT2	Late	9.17	h-n 5 c-g
	Spectro	90 WG	4 OZ/1000 FT2	Late		

Trt No.	Treatment Name	Form	Rate	Appl. Timing	% Snow mold Apr-15-04	Quality**
67	Endorse	2.5 WP	4 OZ/1000 FT2	Late	9.5	h-n 5 c-g
	Spectro	90 WG	5.75 OZ/1000 FT2	Late		
68	Endorse	2.5 WP	4 OZ/1000 FT2	Late	6.67	i-n 5 c-g
	Spotrete	75 WG	8 OZ/1000 FT2	Late		
69	Endorse	2.5 WP	6 OZ/1000 FT2	Late	10.83	g-n 4.7 d-h
	Spotrete	75 WG	8 OZ/1000 FT2	Late		
70	PCNB12.5+Novex 9-0-19	12.5 G	96 OZ/1000 FT2	Late	20.33	c-j 5 c-g
71	Revere	10 G	120 OZ/1000 FT2	Late	18.67	d-l 4.7 d-h
72	Lesco 18 Plus	2 SC	4 FL OZ/1000 FT2	Late	0.33	n 7 a
	Lesco Manicure Ultrex	82.5 WG	5 OZ/1000 FT2	Late		
	Lesco Revere 4000	4 SC	8 FL OZ/1000 FT2	Late		
73	Lesco 18 Plus	2 SC	4 FL OZ/1000 FT2	Late	11.67	f-n 5.3 b-f
	Lesco Manicure Ultrex	82.5 WG	5 OZ/1000 FT2	Late		
74	Chipco 26 GT	2 SC	2 FL OZ/1000 FT2	Late	2.83	lmn 5.7 a-e
	Daconil Weatherstik	6 F	2.75 FL OZ/1000 FT2	Late		
	Turficide 400	4 F	4 FL OZ/1000 FT2	Late		
75	Caloclor	90 WP	3 OZ/1000 FT2	Late	1.67	mn 5 c-g
	LSD (P=05)				16.945	1.42
	Standard Deviation				10.481	0.88
	CV				88.11	17.66

*Means followed by the same letter do not significantly differ (P=0.05, LSD)

**Quality scale 1-9, 9=ideal, 1=dead, 6=acceptable.